

SUPPORT FOR THE AMENDMENT

Support for the amendment to claim 1 is found in claims 2, 6 and 8 as originally presented. No new matter would be added to this application by entry of this amendment. No new issues would be raised before the examiner, as applicants have merely introduced the limitations of existing dependent claims into the independent claim in order to more narrowly focus the discussion. Entry of applicants' amendment and full consideration thereof at this stage of prosecution is respectfully requested.

Upon entry of this amendment, claims 1, 3, 9 and 11-15 will now be active in this application and under active consideration.

REQUEST FOR RECONSIDERATION

The claimed invention is directed to a method of cosmetically treating hair by applying an aqueous dispersion of a cross-linked cationic polymer prepared by free radically polymerizing **a water-in-water emulsion**. Applicants have discovered that preparation of a polymer based on N-vinylimidazoles and N-vinyl lactams by water-in-water emulsion polymerization

The rejections of claims 1-2, 8-9 and 11-15 under 35 U.S.C. §102(b) over Maurin et al. U. S. 6,403,642 and of claims 1-3, 6 and 8-15 under 35 U.S.C. §103(a) as obvious over Schade et al. U.S. 5,962,613 in view of Maurin et al. are respectfully traversed.

None of the cited references disclose or suggest a process of treating hair using the claimed **polymer prepared by a water-in-water emulsion polymerization method** (i.e. 1-100 wt. % of saturation of salt and 0.1 to 30 wt. % of at least one water-soluble protective colloid). A polymer prepared by water-in-water emulsion polymerization has been demonstrated to be possessed of properties which are different from those of a polymer prepared according to Maurin et al. or Schade et al. and therefore the claimed method is neither anticipated nor rendered obvious by the cited combination of references. The demonstration of different performance properties as a result of the method of production indicates a difference in physical structure resulting from such production method.

Method Claims Recite A Limitation On Treating Hair That Is Not recited In Or Inherent To The Disclosure Of Maurin

The claimed method recites application of an aqueous polymer dispersions prepared by a water-in-water emulsion. Such process limitation describes a structural difference from the polymer dispersion of Maurin et al. as applicants have demonstrated improved hair treatment performance properties for the claimed water-in-water emulsion as compared with

a polymer prepared from the same monomers, but by a solution polymerization technique. Thus, the same monomers have been demonstrated to yield polymers having different performance properties, as a result of the method of preparation. The polymer structure resulting from water-in-water emulsion polymerization is **not recited in nor inherent to** the polymer structure resulting from the solution polymerization process of Maurin et al. since the **performance properties are different.**

While page 4 of the official action insists on the presence of a claim limitation on treating hair such as the viscosity, molecular weight or other property of the composition or the polymer to exclude the composition and polymers of Maurin et al. and must have a physical and tangible result that is measurable, applicants note that the current product by process provides such a physical and tangible result which is measurable. Applicants have measured the differences in combing force (wet and dry) resulting for the different methods of preparation. The claimed product-by process limitations do not disappear because the claims are directed to a method of using a product-by process. The claimed product-by process limitations recite a structure with tangible results in a method for treating hair.

Notwithstanding the arguments above, in an effort to more clearly demonstrate the differences between a polymer prepared by water-in-water emulsion polymerization and a method of solution polymerization, applicants have now amended claim 1 to recite the more specific composition of 1-99.9 wt. % of N-vinylimidazoles as monomer a) and 0.1-99 wt. % of N-vinyl lactam as monomer b) in a hair treatment method, consistent with the monomers of examples 2 and 3. The relevancy of applicants' assertions as to the improved structure demonstrated by examples 2 and 3 should now be even more clear.

Further, the relevance of such evidence is clear in view of the failure of the reference to disclose or suggest the claim element of a water-in-water emulsion polymer. The claimed product-by process limitation coupled with evidence of the differences resulting there from

make clear the polymer is not anticipated by Maurin et al. Since the polymers possess differences in performance, the claimed water-in-water emulsion polymer is not anticipated. Since the claimed water-in-water emulsion polymer demonstrates a reduced combing force, wet and dry, the claimed water-in-water emulsion polymer is not obvious.

Neither Reference Describes A Water-In-Water Emulsion Polymer

Applicants note that none of the cited references disclose the claim limitation of a cross-linked cationic polymer **prepared by free-radical polymerizing in a water-in-water emulsion**. A water-in-water emulsion polymerization may be characterized by the monomers being polymerized in the presence of 1-100 wt. % of the saturation amount of a salt and 0.1 to 30 wt. % of at least one water-soluble protective colloid.

Applicants note that **this deficiency** in the cited references has still not been addressed in any official action, in spite of applicants identification of such a deficiency to the examiner.

In view of the deficiency of the cited references to disclose the claim limitation of **prepared by free-radical polymerizing in a water-in-water emulsion**, the claimed invention is neither anticipated nor rendered obvious by the cited references and the rejections must be withdrawn.

The Claimed Treatment Method Uses A Polymer Prepared by Water-In-Water Emulsion Polymerization

Page 3 of the official action recognizes the claimed product-by-process limitation, but asserts that the composition is not claimed. Applicants respectfully note that the claimed process recites as **a claim element**, the application of **a polymer which is prepared by free**

radical polymerization in a water-in-water emulsion. Thus, by claiming the use of a polymer prepared by a specific method, the composition is a claim element.

The Claimed Polymer Is Possessed Of Properties Which Are Not Possessed By The Reference Polymers

Applicants have provided **evidence** of different properties for polymers prepared by the claimed water-in-water emulsion technique.

Such evidence is apparent by the data appearing in Table 1 on page 37 of applicants' specification. For the examiner's convenience, a portion of the data from Table 1 is summarized below;

example	Solution viscosity (mPas/6.5% by wt.)	Appearance of Solution
2	11,500/solution	Clear/no structure
3	4,500/solution	Clear/no structure

Examples 2-3 were possessed of a low solution viscosity and formed clear solutions.

Not only is the claimed product-by-process polymer possessed of properties which are not possessed by a conventional solution polymerized polymer in terms of viscosity, but applicants have also provided **evidence** of a difference in **performance in a hair treatment** method resulting from the claimed product-by-process polymer.

The examiner's attention is directed to page 41 of the specification in which the hair combing performance is demonstrated for the polymers of examples 2, 3, 4 comp and 5 comp. For the examiner's convenience the data is summarized below:

Shampoo Example No	Preparation Example No	Reduction in Combing force, wet (Grade/%)	Reduction in Combing force dry (Grade/%)	Appearance of Shampoo solution
7	2	1-2/56	1-2 / 79	Clear
8	3	1-2/48	1- / 88	Clear
9 Comp	4 Comp	2+/18	2 / 48	Clear
10 Comp	5 Comp	2+/ 29	2-3 / 45	Clear

Shampoo Example Nos 7 and 9 Comp demonstrate a reduction in combing force resulting from polymerizing by a water-in-water polymerization technique (1-2/56 wet, 1-2 / 79 dry) as compared with a solution polymerizing technique (2+/18 wet, 2 / 48 dry). Shampoo Example Nos 8 and 10 Comp further demonstrate this performance dichotomy (1-2/48 wet, 1- / 88 dry) v. (2+ /29 wet, 2-3 / 45 dry). Thus, the claimed method has been demonstrated to yield hair possessed of a more greatly reduced combing force as a result of polymerization by a water-in-water technique.

Applicants' demonstration of a greater decrease in combing force in a method of hair treatment meets applicants' burden of proof as to the effects of the claimed product-by-process limitation.

The Patent Office bears a lesser burden of proof in making out a case of *prima facie* obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983) M.P.E.P. 2113

Page 4 of the official action suggests a lack of understanding of the relevance of applicants' demonstration. Applicants repeat that the product-by process limitation of the claimed method **combined with the evidence** that the process produces a change in the performance of the method meets the burden to provide evidence of the failure of the cited references to disclose the claim limitation of a polymer prepared by a water-in-water emulsion polymerization technique. **If the reference had disclosed** the claimed polymer, the reference polymer **would have the same performance properties**. Since the performance properties are different, the reference clearly does not disclose the claimed polymer. In view of applicants' evidence of differences in performance properties, the relevancy of applicants' demonstration should become lucid.

At the crux of the rejection appears to be the failure to recognize that applicants have met their burden of proof as to their product by process claim by demonstrating that the claim process confers a physical property to the polymer which is not possessed by a conventionally produced solution polymer. Certainly a demonstration of a greater reduction in combing force for treated hair is a sufficient demonstration.

Page 4 of the official action asserts that claim 1 does not recite a feature or property for the polymer which would preclude the hair composition of Maurin et al. Applicants note that the polymer used in claim 1 possesses a property which is not found in the hair composition of Maurin et al. in terms of **combing force reduction**, a property which is reflected in the claim limitation of polymerization by water-in-water polymerization. The combing force reduction property of a solution polymerized polymer has been **demonstrated** to be smaller than that of a polymer prepared by the claimed water-in-water emulsion technique.

Since the cited references fail to disclose or suggest the claimed polymer prepared by water-in-water emulsion polymerization, the claimed method is neither anticipated nor rendered obvious by the cited references and withdrawal of the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) is respectfully requested.

Finally, on page 5 of the official action the examiner announces his treatment of claim limitations f) and g) of claim 1 as “properties of the polymer” in terms of the presence of a positive charge and a protective colloid. Applicants respectfully note that elements f) and g) are compositional limitations as to the claimed polymer such that one or more organic or inorganic salts and at least one water-soluble colloid are compositional elements of the polymer used to practice the claimed method.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

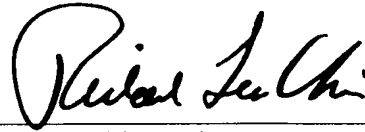
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